COURSE NUMBER: CSCI 275

CREDITS: 3

COURSE TITLE:

INTRODUCTION TO SOFTWARE
ENGINEERING

PREREQUISITES:

MATH 100 or equivalent
MACM 101 and CSCI 225

Weekly Hours: 3 **Lecture:** 3 **Lab:** 0 **Total Hours:** 39 **Total Weeks:** 13

COURSE DESCRIPTION:

This course is an introduction to software engineering tools and techniques
used for software development and project management. Emphasis is placed on the
structured and formal specifications of software requirements, the use of well-
defined design techniques, and the systematic verification and validation of
software products. Practical experience in the application of the concepts discussed
in class is acquired through a group project developing an Android app using the
Android Studio IDE, the Android debugger and a revision control system.

TEXTBOOK:

Software Engineering, Sommerville, Pearson Education, 10th Ed, 2015, 978-
0133943030

LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

Describe the history of Software Engineering.

Describe the qualities of a good software system.

Compare and contrast current software life cycle models.

Use object-oriented design methods.

Work effectively in teams.

Design and implement small computer applications considering characteristics of mobile computing in the context of the mobile architecture.

Apply good project management practices to a software project, such as human resource management, task/resource scheduling, risk analysis and continuous progress monitoring.

Utilize tools to manage and support a software development team.

Review and evaluate team member performance.

Document a project.

COURSE CONTENT:

Week	Topic	Chapter
Week 1	Introduction to Software Engineering	1
Week 2	Software Processes, Version Control	2
Week 3	Change and Risk, Agile Software Development	2, 3
Week 4	Extreme Programming, Assertions and Refactoring	3
Week 5	Requirements Engineering and Documents	4
Week 6	System Modelling	5
Week 7	Structural and Behavioural Modelling, Midterm Exam	5
Week 8	Architecture Design, UML and Patterns	6
Week 9	Object Oriented Design	7
Week 10	Design Patterns and Implementation Issues	7
Week 11	Quality Assurance, Unit and Integrated Testing	8
Week 12	Testing, Software Evolution	8, 9
Week 13	Project Demonstrations, Final Exam Review	

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Established 1982

EVALUATION:

Lab Assignments / Participation	10%
Midterm	20%
Final exam	40%
Quizzes / Projects	30%
Quiz	*5%*
Individual Project	*5%*
Group Project	*20%*
Total	100%

Midterm Exam – Questions types may include: multiple choice, short answer as well as other kinds of questions. Questions are based on the course resources, lab activities, reading and project assignments.

CHEATING:

Students cheating on tests and exams will receive a "F" grade in this course.

If a student misses an exam, a mark of zero will be assigned unless there are extenuating circumstances. In such cases, the proportion of grade assigned to the missed exam will be added to the proportion assigned to the final exam. The final exam will be held during exam week. NO consideration will be given to any student wishing to write the exam at any other time than that assigned.

It is a student's responsibility to know and follow the school's policies regarding cheating on exams.

The school's policy regarding electronic devices is that any student who has a smart phone or other unauthorized electronic device (ie. tablet, smart watch etc.) on their person or around their desk during an exam will be guilty of cheating and will receive a grade of "F" for the course.